

REMARKS/ARGUMENTS

Claims 1-6 and 8-17 are now pending. Claims 1-17 were rejected as unpatentable over Forte in view of Antoon, Jr.

The amendments presented in the Amendment After Final filed on April 12, 2006 were not entered. Accordingly, the claim listing presented above does not reflect those prior amendments.

Applicant appreciates the thorough examination reflected in the Office Actions issued thus far. However, Applicant respectfully traverses the rejections for the following reasons.

The present application relates to a multilayer packaging film for packaging fresh produce or other products requiring a controlled atmosphere within the package. The packaging film is permeable to oxygen, although at least one layer of the film is formed from an oxygen-impermeable composition. Outer layers of the film are heat-sealable, being formed from a heat-sealable composition.

The invention addresses the problems associated with packaging fresh produce, wherein the presence of too much oxygen in the headspace of the package leads to oxidation and bacterial growth, while too little oxygen leads to anaerobiosis, causing spoilage and fermentation (see paragraph bridging pp. 1 and 2). The multilayer packaging film of the invention is designed to provide oxygen permeability of a controlled level, while avoiding the expense and problems associated with mechanical perforation of films used in the prior art (p. 2, lines 14-24). At the same time, the multilayer packaging film has its outer surfaces formed by the layers of heat-sealable composition so that the film can be heat-sealed to itself to form a form-fill-seal pouch or the like (p. 24, lines 2-12, and Figures 5 and 6).

Forte discloses a film having at least five layers with a structure of C:A:B:A:C. The "B" layer is a microporous core layer containing at least one thermoplastic polymer and at least one particulate filler. The "A" layers are adhesive layers. The outer "C" layers are described as

“monolithic” layers containing a hydrophilic polymeric resin capable of absorbing and desorbing moisture and providing a barrier to fluids and microorganisms. Forte specifically describes that breathability of the film is a key objective (col. 1, lines 10-13; col. 3, lines 12-15). Such breathability requires the ability to pass water vapor and oxygen at moderate to high transmission rates (col. 1, lines 16-20).

Antoon, Jr. discloses a controlled-atmosphere container for fresh produce or flowers. The container has a first panel that is substantially impermeable to oxygen and CO₂ but permeable to water vapor (col. 2, lines 4-5), and a second panel of microporous film that is gas-permeable but substantially impermeable to water vapor (col. 1, line 68 through col. 2, line 3). The first panel can comprise cellophane, polyurethane, a crosslinked silicone membrane, or a silicone-coated microporous film (col. 3, lines 14-17).

The Office Action asserted that it would have been obvious to combine Antoon, Jr. with Forte, and specifically that it would have been obvious to substitute the silicone-coated microporous film of Antoon, Jr. for the “B” layer of Forte’s film.

Applicant continues to maintain, as asserted in the Amendment After Final filed on April 12, 2006, that Forte and Antoon, Jr. would not have been combined as asserted in the Office Action. However, even if Forte and Antoon, Jr. were combined, they still would not teach the invention as claimed. In particular, the combination would not have heat-sealable outer layers formed from a heat sealable composition as claimed. Each of the independent claims has been amended to include the limitations of Claim 7 reciting that the heat-sealable composition of the outer layers comprises at least one of polyolefin, ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene methyl acid and ionomer as a primary polymer. The independent claims have further been amended to recite that the primary polymer is present in the heat sealable composition in an amount of at least about 20 weight percent (see specification at p. 15, lines 17-19).

Forte does not teach or suggest heat-sealable outer layers formed of such a heat-sealable composition. Indeed, nowhere does Forte teach or suggest that the outer “C” layers are heat-

sealable, either by design or inherently. The purpose of the “C” layers is not heat-sealability but rather moisture absorbability.

In particular, Forte teaches that the outer monolithic “C” layers of his film comprise a hydrophilic polymeric resin (col. 6, lines 45-47). Specific examples of such resins are cited as polyesters, polyamides, and grades of polyvinyl alcohol and ethyl vinyl alcohol (col. 6, lines 55-59). Also cited are commercial products such as Pebax®, Hytrel®, and Eastman resins (col. 6, lines 60-67). As Applicant previously noted in the Amendment After Final filed on April 12, 2006, the Pebax® resins are polyether block amides (PEBA), and the Hytrel® resins are polyester elastomers. Although detailed information on the Eastman 14776 resin could not be obtained, this material is believed to be a copolyester (see U.S. Patent No. 6,730,057 at col. 12, lines 26-31).

While the above-listed polymers recited at column 6 of Forte are clearly different from the primary polymers as presently claimed, the Advisory Action at page 3 asserts that Forte elsewhere teaches that the outer “C” layers can comprise linear low-density polyethylene (a polyolefin), citing col. 7, lines 1-18. With respect to the outer monolithic layers, that passage actually states that the outer layers can include a surface-smoothing agent to improve surface qualities of the film during extrusion. Forte lists Viton® fluoroelastomers as examples of such surface-smoothing agents, and indicates they are used in very small concentrations (up to about 10,000 ppm, or 1%). Forte then goes on to state:

“These free flow agents can also be used in the microporous core and microporous adhesive layers. Specific examples of suitable flow agents that can be used in the *microporous* layers include Ampacet LR-86769 (3% Viton A in 97% Hexene LLDPE) and Ampacent LR-88249 (3% Viton A in 97% Octene LLDPE) which are manufactured by Ampacet.”

(Col. 7, lines 12-18, emphasis added.)

Forte thus does not state that the outer monolithic layers can include the Ampacet flow agents, but states only that the *microporous* layers can include them. Apparently Forte contemplates employing the Viton fluoroelastomer agents for the outer layers, and the Ampacet agents for the microporous layers. Therefore, contrary to the Advisory Action, Forte does not explicitly teach including any LLDPE in the outer layers of the film.

However, even if Forte were construed as somehow suggesting the use of the Ampacet free-flow agents in the outer layers, the concentration of the agent in the outer layers is not mentioned. It could be presumed, perhaps, that a concentration similar to that for the Viton® fluoroelastomer can be used, but that concentration is only 1% or less.

Forte certainly does not teach or suggest that LLDPE can comprise a primary polymer present in at least about 20% by weight of the composition forming the outer layers, as currently claimed.

Thus, Forte fails to teach or suggest (alone or in combination with Antoon, Jr.) a multilayer film as claimed, having heat-sealable outer layers formed of a heat sealable composition comprising at least one of polyolefin, ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene methyl acid and ionomer as a primary polymer, wherein the primary polymer is present in the heat sealable composition in an amount of at least about 20 weight percent. Accordingly, the claims are patentable over the cited references.

Furthermore, with respect to Claim 10, the combination of Forte and Antoon, Jr., even if made, fails to disclose or suggest a multilayer film having first and second outer layers and a center layer each independently comprising a heat sealable composition comprising at least one of polyolefin, ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene methyl acid and ionomer as a primary polymer present in an amount of at least about 20 weight percent.

For at least the above reasons, it is respectfully submitted that the rejections of Claims 1-17 are erroneous and should be withdrawn.

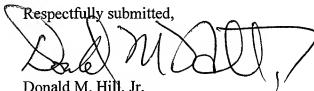
Appl. No.: 10/661,848
Amdt. Dated 06/16/2006
Reply to Office Action of January 24, 2006

Conclusion

Based on the above amendments and remarks, it is submitted that the rejections have been overcome and the application is in condition for allowance.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Donald M. Hill, Jr.", written over a horizontal line.

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